

BUREAU OF ENVIRONMENT CONFERENCE REPORT

SUBJECT: NHDOT Monthly Natural Resource Agency Coordination Meeting

DATE OF CONFERENCE: August 15, 2018

LOCATION OF CONFERENCE: John O. Morton Building

ATTENDED BY:

NHDOT

Sarah Large
Ron Crickard
Mark Hemmerlein
Brian Lombard
Meli Dube
Nancy Spaulding
Kirk Mudgett
Ron Kleiner
Chris Carucci
Bob Landry
Jennifer Reczek
Marc Laurin
Samantha Fifield
Kevin Nyhan
Bob Hudson
Maggie Baldwin

ACOE

Mike Hicks

NHDES

Gino Infascelli
Lori Sommer

NHF&G

Carol Henderson

NHB

Amy Lamb

Consultants/Public

Participants

Mike Croteau
Sean Sweeney
Jennifer Riordan
Brent Williams
Christine Perron
Brian Colburn
Darren Benoit
Jim Murphy
Stephanie Dyer-Carroll
Dan Hageman
Johanna Lyons
Eric Feldbaum

(When viewing these minutes online, click on an attendee to send an e-mail)

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NOTES ON CONFERENCE:**Finalize July 18, 2018 Minutes**

Sarah Large stated that she had only received a few comments and none from the resource agencies. Gino Infascelli stated that he was not in attendance and planned to abstain from commenting. Lori Sommer asked if she could have until Friday to comment. S. Large agreed that she would not finalize the minutes until after hearing from Lori. The July minutes were finalized subsequent to this meeting.

Windham, #41632

Sean Sweeney and Mike Croteau presented the project, which involves replacing an existing 14.5' corrugated metal pipe arch culvert which carries Castle Hill Road over the East Channel of Beaver Brook with a new 24' span precast concrete rigid frame bridge. The project is a NHDOT Municipal Bridge Aid Project. The roadway is currently closed due to the deteriorated condition of the pipe arch which, per the NHDOT bridge inspection reports, was constructed in 1984.

The watershed area of Beaver Brook at the crossing is 48.8 square miles. Therefore, the crossing is classified as a tier 3 crossing and the project is considered a major impact project under the DES Stream Crossing Rules. The river is bifurcated (split) at the crossing. The bridge carrying Castle Hill Road over the West Channel of Beaver Brook was destroyed by the Mother's Day Flood in 2006 and replaced in 2009.

Results of the stream geomorphic assessment were presented. The reference stream type is C4 with a bankfull width of approximately 50'. The average channel slope is about 0.21%. The East Channel runs along a high steep bank which is both the east riverbank and the east edge of the river valley. The active floodplain lies between the East and West Channels and to the west of the West Channel.

The minimum DES Stream Crossing Rules compliant span would be 110' as this is the minimum span needed to accommodate an entrenchment ratio of 2.2. The existing bridge over the West Channel of Beaver Brook has a clear span of about 37'; therefore, a minimum bridge span of 73' over the East Channel would be needed to bring the entire stream crossing into compliance with the DES Stream Crossing Rules. A span of this size is not practicable as the distance between the east edge of the river valley and east abutment of the bridge over the West Channel is only about 60'. Therefore, the proposed 24' span would need to be permitted as an Alternative Design under Section Env-Wt 904.09 of the Stream Crossing Rules.

Approximately 1,500 square feet of permanent and temporary river channel impacts are anticipated and the cumulative length of river bed and bank impacts is expected to be about 150 feet. The project will not impact any vegetated wetlands.

NHB has records of two state endangered species (Brook Floater and Blanding's Turtle), one state threatened species (Spotted Turtle), and one state special concern species (Wood Turtle) in the project vicinity. NHFG has been contacted and the greatest concern is potential impacts to Brook Floater, a freshwater mussel. Channel substrate is gravel and cobble and appears to be suitable habitat. A Brook Floater survey was conducted at the project site by Oak Hill Environmental Services in 2008 for replacement of the bridge over the West Channel of Beaver Brook. That survey did not find any Brook Floater mussels at the site. A copy of the survey report was provided to Kim Tuttle at NHFG along with a request for a decision as to whether a new survey would be required as the survey can only be completed up to about mid-September.

The project site lies in a FEMA Zone AE Special Flood Hazard Area (SFHA) but is outside the floodway. Windham participates in the NFIP and has adopted a Floodplain Development Ordinance (FDO) which is equivalent to the minimum federal floodplain management regulations. Hydraulic modeling of the proposed bridge indicates that Base Flood Elevations (BFEs) will decrease upstream from Castle Hill Road and remain unchanged downstream. Therefore, the project will comply with both local and federal floodplain management regulations. A Letter of Map Revision (LOMR) will be submitted to FEMA after construction in accordance with federal floodplain management regulations (44 CFR §65.3 and §65.6).

The expected method for diverting streamflow around the work area during construction would entail installing temporary cofferdams across the East Channel upstream and downstream from Castle Hill Road such that all flow is forced through the bridge over the West Channel.

The project will require a DES Wetlands Permit and a DES Shoreland Permit. It is expected that the project will be authorized by the U.S. Army Corps of Engineers under the NH State Programmatic General Permit (NHSPGP).

Lori Sommer asked if new areas of riprap bank protection are proposed. Mr. Sweeney answered yes. Ms. Sommer then indicated that compensatory mitigation will be required for these bank impacts either via on-site restoration or in-lieu fee.

Carol Henderson stated that she would check with Kim Tuttle and let us know whether a Brook Floater survey will be required.

Ms. Sommer asked if a wildlife shelf is proposed within the bridge opening. Mr. Sweeney explained that because the east bank of the East Channel runs along a high steep slope which is also the edge of the river valley, it is not feasible to create a shelf (i.e. floodplain bench) on the east side of the channel within the bridge opening as there is not a floodplain surface bordering that side of the channel upstream or downstream from the road which it could connect to and that extensive grading on abutting properties upstream and downstream of Castle Hill Road would be required to create a contiguous floodplain surface on the east side of the brook through the stream crossing. Mr. Sweeney went on to say that it may be technically feasible to create a narrow floodplain bench along the west bank of the east channel within the bridge opening but that it would merely provide wildlife passage between portions of the small island upstream and downstream from the road and would thus not create a true corridor for terrestrial wildlife.

Ms. Henderson asked at what time of year construction would occur. Mr. Croteau stated that is would likely occur during low flow conditions in the summer of 2019.

Mike Hicks asked whether there would be any net fill in the 100-year floodplain. Mr. Sweeney stated that there would be a net decrease in the amount of floodplain fill due to the longer bridge span and no changes to the road profile.

Mr. Hicks suggested that the project area be screened for federally-listed threatened and endangered species using the USFWS online Information for Planning and Consultation (IPaC) tool.

The question was asked as to whether potential impacts to cultural resources were being evaluated. Mr. Sweeney stated that the NH Division of Historical Resources (NHDHR) will be consulted during the permitting process. Additionally, Mr. Croteau indicated that due to the relatively young age of the pipe arch and concrete headwalls and the extensive coordination he had with NHDHR for replacement of the bridge over the West Channel it is unlikely that there will be any significant cultural resource impacts.

This project has not been previously discussed at a Monthly Natural Resource Agency Coordination Meeting.

Walpole, #41624A

Meli Dube, NHDOT Bureau of Environment (BOE), introduced the project which is a twin stone arch culvert carrying the abandoned Cheshire Branch RR over Great Brook in the Town of Walpole. The arch floor and sidewalls are deteriorating and restoration efforts to preserve the crossing are proposed. Brian Lombard, NHDOT Bureau of Rail and Transit, provided a history of the crossing, the current condition and the proposed work. The crossing was originally constructed when the RR was built in the 1800s, the Cheshire Branch RR was purchased by the State in 1995 and the need for work was identified in 2012 when the culvert was surveyed as part of the Cultural Resources mitigation efforts for the work on the nearby stone arch culvert in Westmoreland. The current condition at the outlet is severely perched with a deep pool (estimated at least 5' deep) and it is believed that the crossing was constructed with the perched condition, evidenced by repair plans from 1921 which depict the installation of a timber plank sluice from the outlet to the Right-of-Way line with a large timber blank at the outlet of the culvert which may have served as a dam. The timber planking is no longer in place and some granite blocks which were constructed as part of the invert of the culvert have washed out of the north barrel. A concrete subfloor, which extended around the outside face of the concrete blocks at the outlet, was installed at some point prior to DOT ownership, however, part of the concrete subfloor has also washed out and some granite blocks on the culvert sidewalls have loosened. Concrete toe-walls were installed as part of an emergency repair effort in 2014, however, the sidewalls continue to undermine and warrant repair.

B. Lombard detailed the proposed work, which will install a 12" thick concrete slab floor approximately 28' long by 11' wide (308 square feet) to tie in to the elevation of the original granite block floor inside the north barrel. The concrete slab will wrap around approximately 4' of the front edge of the outlet and extend 24' (96 s.f.) across the length of the outlet to cover the granite blocks in front of the south and north barrels and preserve the existing stepped condition of the granite blocks. The concrete will form a ramp in front of the south barrel to tie in to the existing elevation of the granite block invert. The proposed repair also includes installing toe walls on either side of the north barrel approximately 2' thick and 28' long (112 s.f.) to secure the undermined sidewalls. All work impacting the stream will be located within the existing structure and on the face of the outlet from the existing granite block step at the outlet. No work will occur in the stream bed or pool adjacent to the structure. Water can be diverted through the south barrel during work on the north barrel and vice versa so all work can be accomplished in the dry. This proposed work will result in approximately 516 s.f. of stream impact in the structure. This culvert will be access via an existing access road, minor tree clearing around the top of the existing outlet is also proposed.

Carol Henderson, NH Fish and Game, asked if the existing perched condition could be fixed. Gino Infascelli, NHDES Wetlands Bureau, commented that this would require reconstructing the entire downstream channel and banks to raise the elevation of the stream bed to meet the invert elevation. M. Dube and B. Lombard explained that funding for this project is limited through the Capital Fund and the work required to address the perch and deep pool would increase impacts and cost beyond the scope of the proposed project and current budget. It was agreed that addressing the perch is infeasible at this time.

Michael Hicks, US Army Corps of Engineers, inquired if the repairs to the culvert floor would change hydraulics through the structure and requested that this be addressed and documented in the wetland application. M. Dube confirmed that the FEMA Flood Insurance Rate Maps for this area were checked and there are no known floodplains or regulatory floodways in the project area. M. Hicks also noted that consultation with the US Fish and Wildlife Service (USFWS) and the NH Division of Historical Resources (NHDHR) would be required. M. Dube stated that Section 106 coordination with NHDHR is in process. M.

Dube confirmed that the USFWS Information for Planning and Conservation Tool identified the project area as being in the range of the northern long-eared bat (NLEB) and the northeastern bulrush. M. Dube will complete a survey for NLEB during the wetland delineation scheduled for late summer/early fall. M. Hicks asked if there is a known NLEB hibernacula in Walpole and M. Dube responded that there is not but she will confirm with USFWS and NHFG. Amy Lamb, NH Division of Natural and Cultural Resources Natural Heritage Bureau (NHB), noted that it is unlikely for northeastern bulrush to occur in the project area due to lack of preferred habitat. M. Dube will work with M. Hicks to complete necessary USFWS consultation for NLEB and northeastern bulrush, “no effect” findings for both species are anticipated.

Amy Lamb expressed concern for impacts to NHB resources on the RR embankment due to access to the culvert and B. Lombard confirmed that the access road which was constructed for the 2014 emergency repair efforts is still in place and will be used for this work. A. Lamb confirmed that there is no further concern for the species and habitats noted on the NHB DataCheck Response Memo (NHB18-2540) including Loesel’s wide-lipped orchid (historic record), red maple-black ash swamp, and sycamore floodplain forest.

Sarah Large, NHDOT Bureau of Environment, noted that all permanent impacts through the culvert are necessary for the maintenance of existing infrastructure and Lori Sommer, NHDES Wetlands Bureau, confirmed that no mitigation would be required for this work. S. Large noted that the US Coast Guard has been consulted and has no concern for impacts to navigable waters as a result of this work.

This project has not previously been reviewed at a Natural Resource Agency Meeting.

Wakefield, M312-13

Nancy Spaulding presented on the project and project history. She described the project location as being approximately 500 feet SW of the Maine border on NH 153 along Province Lake. The tier 3 crossing carries the South River under NH 153. The river starts in the hills of Maine and makes its way down gradient to Province Lake. There is a large marshy wetland area to the east of the crossing at the inlet of the pipes where the South River flows through. The project scope is to replace the deteriorating twin metal pipes. The Department is proposing to replace the twin 28” corrugated metal pipes with twin 34” reinforced concrete arch pipes. N. Spaulding showed images of the crossing and surrounding landscape. Images showed the expansive marsh at the inlet side of the crossing and Province Lake at the outlet.

N. Spaulding summarized the impacts for the project: 650 sq. ft. temporary impacts, 300 sq. ft. of permanent wetland impacts. The project is necessary and needed to maintain the integrity of NH 153 in this area. This will ensure vehicle access to the roadway system is maintained. The alternatives for this pipe crossing included a 20’ span concrete box structure to accommodate the upstream drainage area calculated by Streamstats. The 20’ span box however, is not practicable at this location; the vertical alignment of the road would have to be raised for a substantial distance of NH 153 in both directions due to the limited cover depth. With the current Highway Maintenance budget the costs associated with this alternative would be cost prohibitive. NHDOT Project Development’s Culvert Improvement Program would be more equipped to design and construct a larger span structure; however, the program may not be able to work on the project until 2021.

The project was previously submitted as a minimum impact project with DES file number 2017-01738 and was denied as a major impact project. The project team plans to resubmit for the replacement as a major impact project and to address the stream crossing rules for this crossing.

Mike Hicks asked how the project would address the sedimentation throughout construction and specifically the sedimentation at the outlet of the crossing at the confluence with Province Lake. N. Spaulding agreed with M. Hicks that the sedimentation at this location is a challenge. She advised that during construction they will use a sandbag cofferdam at the outlet and will de-water the system by pumping the water to a sediment bag to treat any of the water that was collected in the project site. However even after construction the outlet at the confluence of Province Lake will look similar to the way it does today. It will be cleaner.

Carol Henderson asked if we could shorten the pipes any? Lori Sommer indicated that the water level looks to be low in the photo shown. N. Spaulding indicated that the photo was taken the day before (8/14/2018). N. Spaulding advised that they could look into shortening the pipes up some and how that would impact the shoreline of Province Lake. S. Large asked Gino Infascelli if he liked the idea of shortening the proposed pipes. G. Infascelli said no. He added that the project team needs to really look at the stream crossing rules and review the entire stream rule checklist and actually address them. Since this is a Tier 3 crossing, the rules require an open span structure. S. Large said, with the crossing inletting into a lake, the low clearance of the road, and diffuse marshy habitat upstream the location is a difficult site to meet the stream crossing rules and that the proposed replacement is proposed as an alternative design and within the application will address 904.09 rules to the maximum extent practicable with the constructability constraints. G. Infascelli said that it should be shown in some sort of an alternative plan how the 20' or larger structure would influence the roadway elevation. Show what you really considered; show why other alternatives can't be done. S. Large added that this location is a very difficult location to address due to the resources; the wetlands at the upstream side and immediately inletting into the shoreline of a lake. The group agrees that it is a tough location. N. Spaulding indicated that the water levels are essentially the same on both sides. G. Infascelli articulated that there are other examples that are similar and that other Districts have put in larger structures and that we should look into it further.

S. Large indicated that the project team will look into the cover depth and constructability constraints further and how those related to design alternatives. She indicated that further information about the system / stream and wetland complex is needed. G. Infascelli stated that a stream assessment was needed. L. Sommer asked if the crossing had been assessed through the SADES protocol. S. Large indicated that the crossing has not been assessed through the SADES protocol and a stream crossing assessment has not been completed at this location since the upstream resource does not align with the intent of the stream crossing guidelines: wetland upstream lake downstream. S. Large indicated that the inlet type would be classified as a wetland under the Stream Crossing Assessment Initiative / SADES protocol. South River doesn't have defined channel banks. S. Large stated that the wetted channel width or in other words the primary channel where water flows through the wetland complex could be measured, along with sediment type at the inlet and outlet, vegetation, and signs of erosion. However, the bankfull width measurements might not be achievable due to the type of resource upstream (scrub-shrub wetland?).

Mark Kern indicated that it might be helpful to look at the pros and cons of waiting to put the crossing into the Culvert Improvement Program and do it right. N. Spaulding advised that the concern is with timing. The culverts are vulnerable and at risk currently and if the designs that are feasible for District to construct can't be permitted and it has to be designed by Project Development, the culvert's may fail between now and then, so District is trying to replace them before that happens.

N. Spaulding indicated that it is a heavily used road, especially in the summer time due to its proximity to the lake.

C. Henderson asked if the roadway has ever flooded. N. Spaulding indicated that the water has never overtopped the road at the crossing but that the road has been flooded to the north near the golf course up that way.

M. Hicks asked how old the pipes were. N. Spaulding indicated that she thought that the roadway was last improved in the 50s / early 60s. They have been there over 50s years.

Amy Lamb indicated that there is a rare plant species growing along the shoreline of the lake near the culvert: coastal plain grass-leaved goldenrod (*Euthamia caroliniana*). This species was previously surveyed at the site to assess for potential impacts from the proposed replacement of the concrete pipes. At the time, NHB had no concerns. Since DES has requested that the design be revised to address the Stream Crossing Rules, NHB requests that this species be considered and factored into the new design to reduce the risk of impacts.

N. Spaulding advised that when they come back she will advise what the timeline of projects are for the culvert improvement program area and where this would fall in.

This project has not been previously discussed at the Monthly Natural Resource Agency Coordination Meeting.

Gilford, #41655 (X-A004(710))

Chris Carucci gave an overview of the project, which involves the rehabilitation of an existing culvert that carries an unnamed perennial tributary to Jewett Brook under the US Route 3 Bypass Southbound On Ramp from NH Route 11A. The project is funded under the Federal Culvert Rehabilitation Program. The proposed advertising date is November 27, 2018, with construction anticipated in the summer of 2019. There are two 84" pipes just upstream that are in the process of being added to the culvert rehabilitation program but no further information is currently available.

The existing culvert is 84" in diameter and 132 feet long and was constructed in 1964. The culvert slope is approximately 1.9% with about 20 feet of cover and has mitered ends. There is severe corrosion along the invert, substantial portions of missing invert, and some changes in shape. A sinkhole is forming above the inlet end.

The culvert has performed well for over 50 years, with no reports of flooding or damage. The USGS StreamStats drainage area is 1.34 square miles (857.6 acres). As a result, the stream crossing is classified as Tier 3.

Design flows will be based on StreamStats Q100 of 328 cfs. Headwater depth required to pass the Q100 is around 8.2'. The inlet area is contained within the roadway slopes and there is no bypass. The headwater would eventually backup through existing pipes and overtop Route 11A, however the road is over 25 feet above the pipe invert.

Project alternatives considered included culvert rehabilitation, replacement in-kind, and replacement with an 8' wide by 7' high embedded box culvert. Based on NH Regional Curves, the bankfull width should be around 14', suggesting a span of about 19'.

Rehabilitation is the preferred option due to the height of fill. Replacing in-kind or with a larger structure by open cut would involve an excavation depth of at least 27', removal and reconstruction of about 200 linear feet of ramp, 3,000 to 5,000 cubic yards of excavation, and closure of the ramp for at least a month.

Ramp traffic volume is approximately 3,000 vehicles per day. Detour length via state routes would be about 6 miles.

Cost estimates for the alternatives are \$850,000 for an 8'x7' box culvert, \$560,000 for replacement in-kind, and \$275,000 for rehabilitation.

The proposed rehabilitation is a metal structural plate liner (known as a tunnel liner plate). This liner is constructed from inside the existing pipe. This allows work to proceed from inside the completed rings. When complete, the annular space is filled with grout. Another benefit of this method is that it can accommodate low flows being pumped through the existing pipe and storm flow if necessary. The liner will be approximately 76" in diameter (slight reduction in diameter, from 84"). At the outlet, the liner will be approximately 2" above the existing invert and at the inlet it will be approximately 5" below existing. This will reduce the culvert slope from 1.9% to 1.3%.

At the outlet, the mitered end will be left in place and repaired with concrete. At the inlet, the mitered end and about 10' of pipe will be removed and a new concrete headwall will be constructed. This will shorten the pipe from 132' to 114'. Temporary access roads will be required from NH Route 11A to the inlet and outlet sides. Existing stone at the inlet and outlet will be reset to match the new pipe inverts.

The rehabilitated culvert will pass the Q100 flow without adverse effect on roadways or upstream development. The raise in the Q100 headwater depth is predicted to be around 12" but impacts are not anticipated due to the height of the surrounding roadway fill.

Estimated wetland impacts are as follows:

- Inlet side
 - Permanent bank impacts – 80 SF each side (to reshape existing stone-lined banks)
 - Temporary wetland impacts – 2,000 SF
- Outlet side
 - Permanent channel impacts – 25 SF (to match new invert)
 - Temporary wetland impacts – 2,000 SF

In total, wetland impacts are anticipated to include approximately 105 SF of permanent impact and 4,000 SF of temporary impact. Linear footage of permanent perennial stream impact is estimated at 10 LF of channel and 25 LF of bank.

Meli Dube asked how the impacts inside the existing pipe should be accounted for in the wetland permit application and whether mitigation is required. Gino Infascelli replied that these impacts don't need to be included in the application since this portion of the stream channel is located within the existing pipe and has already been impacted. Lori Sommer confirmed that mitigation is not required since channel is being created by shortening the pipe.

Carol Henderson asked if there are any impacts to wildlife connectivity and if the existing culvert is perched. Meli and Chris responded that the culvert is not perched and no impacts are anticipated.

Some tree and shrub clearing will be required for construction. Meli will complete the appropriate coordination for northern-long eared bat. The USFWS IPaC report also listed small whorled pogonia, however upon closer inspection, there are no records in Gilford so no effects are anticipated. There were no concerns in NH Natural Heritage Bureau's report.

Gino stated that the stream crossing rules still need to be addressed. The amount of cover is an issue for culvert replacement, so the project can be reviewed as an alternative design.

This project has not been previously discussed at a Monthly Natural Resource Agency Coordination Meeting.

Lebanon-Hartford, #16148 (A001(154))

This project involves the rehabilitation and widening of the Interstate 89 bridges over the Connecticut River between Lebanon, NH and Hartford, VT. The project was last reviewed at this meeting in February 2017. The purpose of today's meeting is to review proposed impacts and mitigation once more before permit applications are submitted.

Brian Colburn provided an overview of the project. The existing superstructure steel will be replaced with new steel and an in-fill will be constructed in the gap between the bridges to provide a single 110' +/- wide bridge deck to facilitate traffic control. The in-fill will require new footings between each of the five pairs of existing piers, four of which are located in the river. The resulting bridge will allow for maintenance of traffic during phased construction. Following construction, the bridge will provide two through lanes in each direction and auxiliary lanes between Exit 20 and I-91 ramps.

Three stormwater treatment areas will be constructed to treat runoff. Work as proposed will result in a net increase of approximately 0.9 acres of impervious surface in New Hampshire and 0.5 acres in Vermont. A proposed treatment swale and infiltration basin in New Hampshire will treat runoff from approximately 2.82 acres of pavement. An infiltration basin proposed in Vermont will collect and treat runoff from approximately 2.04 acres of pavement. For the overall project, there would be approximately 4.86 acres of pavement treated, compared with an increase of 1.4 acres of new impervious surface.

Two piers require scour protection. The first, easternmost pier does not experience scour and the fourth, westernmost pier in the river is located on bedrock; therefore, these two piers do not need scour protection. A-Jacks concrete armor units are proposed for the two piers in the center of the river. Mats of these interlocking units would be constructed on land or a barge and then lowered by crane to the river bottom around each pier. The mats would be placed on top of the channel substrate. Since no excavation or placement of bedding materials will be required for the A-Jacks, the use of cofferdams will be limited to the footprint of the new pier footings. The existing piers have been experiencing scour, and scour protection would be necessary even if new footings were not proposed.

Due to the new piers and scour protection, the work as proposed would result in a slight increase in base flood elevation. Mitigation will be incorporated into the project to eliminate this increase. Proposed mitigation will entail benching into the VT bank to create a narrow shelf, staying approximately 1' above ordinary high water.

A work trestle across the full width of the Connecticut River will likely be needed for construction. To provide flexibility to the Contractor in locating the temporary construction trestle, a large footprint of temporary impact will be included in the permit application to accommodate an upstream or downstream trestle with extensions to the middle of the bridge to access each pier. This large footprint eliminates the need to show the location of every trestle pile. Actual temporary impacts within this large footprint would be limited to the trestle piles, which would total approximately 600 sq ft.

A temporary causeway/work platform would be needed off each bank of the river to provide a platform from which the trestle would be constructed. A small work platform will also be needed under the bridge

between the NH bank and first pier. The trestle and causeways would be in place for the duration of construction, which is expected to be up to four years. The Contractor will only be allowed to build one trestle, either upstream or downstream of the bridge, so only 3 of the 5 causeways would be constructed (one for pier access, two for the trestle).

Christine Perron provided a summary of proposed impacts:

Permanent wetland impacts: There will be no wetland impacts in NH.

Permanent bank impacts from drainage work: 623 sq ft (59 linear ft)

Permanent channel impacts from the new footings: 3,117 sq ft (158 linear feet)

Permanent channel impacts from scour protection: 20,895 sq ft (286 linear feet)

Temporary impacts from causeways: 6,710 sq ft (213 linear feet)

Temporary impacts from trestle/construction footprint: 87,289 sq ft (Actual impacts from the trestle would be limited to the piles that support the trestle, which would be a total of approximately 600 sq ft.)

Total permanent: 24,635 sq ft (503 linear feet)

Total temporary: 95,147 sq ft (565 linear feet)

Temporary impacts to Vermont side of the river: 385 sq ft

C. Perron noted that she had coordinated with Mike Hicks and his counterpart in Vermont (Mike Adams) last year regarding Section 404/10 permitting. The total area of proposed temporary and permanent fill in the navigable waterway is approximately 0.72 acre in NH and 385 sq ft in VT. Since these impacts are below each State's threshold for an Individual Permit for work in navigable waters, and because there have been no public concerns raised about the project, Mike Hicks and Mike Adams indicated that the project could be authorized under each State's general permit. M. Hicks confirmed that the project would be authorized under the NH GP.

Impacts requiring mitigation were reviewed. Permanent impacts from the new pier footings (158 linear feet) and drainage work (59 linear feet) will require mitigation. Permanent impacts from scour protection (286 linear feet) were discussed. At a previous meeting, there had been consensus that the scour protection would not require mitigation since it would be protecting existing infrastructure. However, there was now concern over whether the scour protection would be protecting new or existing infrastructure since each location of proposed A-Jacks would encompass two existing piers and one new middle pier. B. Colburn clarified that there is an existing scour concern at the existing piers, that the proposed work was not causing the scour concern, and that the scour protection would be needed in the same footprint as proposed even if the new pier footings were not proposed. Based on this discussion, there was agreement that mitigation would not be required for the scour protection. G. Infascelli noted that the permit application should clearly describe why scour protection is proposed.

The need to mitigate for temporary impacts from the proposed causeways was discussed. At the last meeting, Lori Sommer had suggested contacting Mike Johnson (National Marine Fisheries Service) about mitigation for the temporary causeways since they would be in place for up to 4 years. Mike Johnson was contacted and suggested that mitigation for the proposed causeways would be consistent with the Sarah Mildred Long project, which provided mitigation for impacts from a temporary causeway. However, DOT has concerns with requiring mitigation for the Connecticut River causeways. First, the Sarah Mildred Long causeway resulted in impacts to tidal wetlands, which would be more sensitive to changes in hydrology over a period of time, and impacts from small causeways along the banks of the Connecticut are not directly comparable. Second, Mike Johnson had previously reviewed the project through EFH consultation

in 2014 and had no concerns with the project at that time, and now the Connecticut River is no longer subject to EFH consultations. Finally, the causeways will consist of stone fill placed within sheet piles and on geotextile fabric to minimize their footprint and disturbance to the streambed. The sizes of the causeways have been minimized and they will extend only 25' to 40' out from the bank. The causeways will be located in areas that were likely impacted by construction of the existing interstate bridges. Any effects to the river, which is 550' in width, would be minimal. All stone fill from the causeways will be removed following construction.

Mark Kern expressed some concern over impacts to aquatic habitat, such as compaction or other changes to the substrate, due to the amount of time the causeways would be in place and the time it would take for the habitat to recover. However, Carol Henderson noted that NH Fish & Game does not have concerns with impacts to the substrate. L. Sommer, M. Hicks, and M. Kern agreed that no mitigation for the temporary causeways would be required.

DOT has reached out to the Lebanon Conservation Commission and Upper Valley Land Trust for input on mitigation options. If no suitable projects are identified, then mitigation will be in the form of an in-lieu fee payment of \$53,746.56.

M. Hicks asked about coordination on the Coast Guard Bridge Permit and northern long-eared bat consultation. C. Perron responded that the US Coast Guard has concurred that the project is exempt from a Bridge Permit under Section 144(h), and that the project is federally funded and was reviewed under the Programmatic Consultation for northern long-eared bat.

The permit application will be submitted in approximately one month. The tentative advertising date for the project is June 2019, with the start of construction expected to be just over a year from now.

This project has been previously discussed at the 5/21/2014, 11/19/2014, 2/17/2016, and 2/15/2017 Monthly Natural Resource Agency Coordination Meetings.

Lebanon TAP, #41366 (X-A004(617))

Darren Benoit, DuBois & King, gave an introduction to the project including the project locations and scope of work. There is one 950-foot segment of multi-use path proposed, along Lahaye Drive between Mt Support Road and NH Route 120. This is an important connection between Dartmouth Hitchcock Medical Center (DHMC) and commercial and new residential development east of NH Route 120. Anticipated construction is 2019/2020.

The project is about to conclude the Engineering Study. Alternatives include a path on either side of Lahaye Drive mostly within the existing ROW. Due to adjacent wetlands, retaining wall alternatives were also developed to consider the balance between additional project cost and the corresponding potential reduction in wetland impacts. Need for the project included an overall plan for Lebanon's alternative transportation plan showing the importance of this link within the DHMC neighborhood. All alternatives included wetland impacts and potential impacts to bat habitat. Project is NHB18-2003. No concerns were identified.

Considerations for the alternatives analysis include environmental impacts, public outreach, and bicycle and pedestrian crossing/connections at NH Route 120. Comparing the additional costs, the retaining walls compared to the limited reduction in wetland impacts the retaining wall alternatives were difficult to justify. On the north side there is an existing crossing across NH Route 120. The northern alternative would not require an additional crossing to be added across NH Route 120 or Lahaye Drive. The Southern

alternative would require additional crossings of both NH Route 120 and Lahaye Drive. Due to the anticipated impacts to traffic patterns along NH Route 120 and the flow pattern into DHMC, the northern alternative is more desirable. The preferred alternative is the north side of Lahaye Road without the retaining wall.

Comments received:

There was a recommendation to consult with the Lebanon Conservation Commission and the Upper Valley Land Trust. There may be mitigation projects planning that this project could participate. The plan is to come back with more refined project impacts and impact areas.

This project has not been previously discussed at a Monthly Natural Resource Agency Coordination Meeting.

Seabrook-Hampton, #15904 (X-A001(026))

The first Natural Resources Agency Coordination Meeting for the Hampton Harbor Bridge Project was held on August 15, 2018 at the offices of the New Hampshire Department of Transportation (NHDOT) in Concord, NH. Jennifer Reczek, NHDOT's Project Manager, opened the meeting by welcoming attendees, facilitating introductions, and outlining the agenda for the meeting. She explained that the project is just beginning and that NHDOT anticipates preparing an environmental assessment (EA) for the project.

Jim Murphy with HDR then provided some background on the project. He explained that the bridge is a vital transportation link which accommodates up to 18,000 vehicles per day during peak periods. The bridge was constructed in 1949 and is one of two remaining bascule bridges in the state, the other being the NH 1B Bridge in New Castle and Rye, NH. Mr. Murphy said that the harsh saltwater environment increases the need for maintenance on the bridge. The Hampton Harbor Bridge has been rehabilitated numerous times over the last 50 years, including most recently emergency repairs to the bascule span mechanical system in March 2018. He said the project is necessary because the bridge is now structurally deficient and functionally obsolete; it is on NHDOT's "red list" of bridges requiring rehabilitation or replacement; and the bridge has long-term operational issues. The project is also necessary in order to improve pedestrian and bicycle mobility.

Mr. Murphy then explained the project process. He said the Project Team has begun evaluating the existing conditions of the bridge. Once this is complete, they will develop a range of alternatives, and then prepare a Type, Size and Location Study (TS&L) which will evaluate each of the alternatives from an engineering perspective. The TS&L will select two action alternatives to be further evaluated to determine their impact on natural and man-made resources. Mr. Murphy shared that the alternatives under consideration include Major Rehabilitation, Replacement with a Fixed Bridge, and Replacement with a Bascule Bridge.

Dan Hageman, a member of the HDR consultant team, explained the necessary environmental compliance for the project. He said agency coordination has already begun, and that this information will be used in the preparation of the EA for the project. He said consultation and coordination for the project will also be undertaken in accordance with Section 7 of the Endangered Species Act (ESA), Section 4(f), Section 6(f), and Section 106 of the National Historic Preservation Act.

Mr. Hageman then described key resources that have been identified within the project area. He explained that a wetland delineation was undertaken in June 2018 which identified estuarine and marine wetlands within the project area, but no tidal wetlands. Additional resources have been identified through agency coordination and field survey, including Threatened and Endangered Species, essential fish habitat species, beach and dune habitat, shellfish, conservation lands and floodplains. Mr. Hageman showed mapping

depicting the locations of the state listed hairy hudsonia, as well as a Piping Plover enclosure, both identified through field survey. He further explained that NH GRANIT data shows a blue mussel bed on the north side of the channel under the bridge. He also said that the project area includes lands identified by the NH Fish and Game (NHFG) as being the highest ranked habitat in the state.

Mr. Hageman then described the agency coordination that's occurred to date. He said coordination letters had been sent to the New Hampshire Natural Heritage Bureau (NHNHB); NHFG, the National Oceanic and Atmospheric Administration (NOAA), the US Army Corps of Engineers (USACE), the US Fish and Wildlife Service (USFWS), the New Hampshire Division of Historical Resources (NHDHR), the Seabrook and Hampton Harbormasters, and the US Coast Guard. He said NHNHB responded to the initial coordination, identifying three community types, nine plant species, and two avian species (the least tern and the piping plover). NOAA's response confirmed that four ESA listed threatened or endangered sea turtles, five threatened or endangered Distinct Population Segments of the Atlantic sturgeon, and the endangered shortnose sturgeon may occur within the project area. NOAA also identified 26 Essential Fish Habitat (EFH) species, trust resources, and diadromous fish species which may occur in the project area. Mr. Hageman explained that an IPac was generated for the project through consultation with the USFWS which identified the potential for the presence of the Northern long-eared bat (NLEB) and the red knot. Mr. Hageman indicated that consultation has been initiated with NHDHR to identify historic properties within and in the vicinity of the project site.

Mr. Hageman concluded the presentation by listing next steps. He indicated that a site walk has been scheduled with regulatory agencies on August 24th. At that time, the consultant team will complete the inspection of the bridge and adjacent structure for the NLEB. The consultant team is also finalizing the wetland report. A Public Information Meeting for the project is scheduled for September 26th in evening. The design team anticipates completing the evaluation of the bridge rehabilitation alternative this fall, at which point they will begin investigation of replacement options.

Carol Henderson with NHFG said the project team should be sure to coordinate with the NHFG Marine Division. Mr. Hageman said representatives will be attending the site walk on August 24th. She also suggested the team coordinate with Chris Williams at NH Department of Environmental Services (NHDES).

Mike Hicks with USACE asked if the jetty north of the bridge is owned by the Parks Department or by USACE. Ms. Reczek said they weren't sure about the structure's ownership but that a hydraulic analysis will be a component of the Preliminary Design Phase. Mr. Murphy said he suspects the jetty would not be a factor in the project because of its distance from the bridge.

Carol Henderson asked about the scope of the in-water work. Ms. Reczek said in-water work will be required as part of the project, whichever alternative is selected. Ms. Henderson suggested the project team consider eelgrass in the vicinity of the bridge. She said Fred Short at the University of New Hampshire would have the most accurate data.

Eric Feldbaum with NH State Parks indicated the small building immediately northwest of the bridge is owned by the Town of Hampton. He said there are parks which have received 6(f) funding located both north and south of the bridge, including Hampton Beach State Park in Hampton and Harborside Park in Seabrook. This will need to be considered as the project progresses and alternatives are identified.

Mike Hicks asked if both rehabilitation and replacement would require a temporary off-alignment bridge. Mr. Murphy said rehabilitation would require a temporary off-alignment bridge, while replacement would

entail a permanent off-alignment structure. Mr. Hicks said the project will necessitate an individual 404 permit through USACE.

Mr. Hageman asked Amy Lamb with NHHNB about their coordination response, specifically whether NHHNB is concerned with plant species that lie outside the identified project area. Ms. Lamb said they provided that information for reference, to show what additional species could potentially occur within the project area. She asked if the project team will be looking at the areas north and south of the bridge. Mr. Hageman said yes, but that they will be focusing on the areas that are not currently maintained. Mr. Hageman said formal surveys for listed species will not be undertaken during preliminary design, that the information they are currently collecting is for broad planning purposes.

This project has not been previously discussed at a Monthly Natural Resource Agency Coordination Meeting.